LITHIUM STATISTICS

By Thomas D. Kelly and Joyce A. Ober

[All values in metric tons (t) unless otherwise noted]

Last modification: August 29, 2002

Year	Production	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1900	10.4			10.4			
1901	35.0			35.0			
1902	24.9			24.9			
1903	23.1			23.1			
1904	11.5			11.5			
1905	1.58			1.58			
1906	7.66			7.66			
1907	10.60			10.60			
1908	4.06			4.06			
1909	3.78			3.78			
1910	4.76			4.76			
1911	10.0			10.0			
1912	7.20			7.20			
1913	10.6			10.6			
1914	10.5			10.5			
1915	9.72			9.72			
1916	12.4			12.4			
1917	41.2			41.2			
1918	118			118			
1919	126			126			
1920	234			234			
1921	36.7			36.7			
1922	43.8			43.8			
1923	46.2			46.2			
1924	59.9			59.9			
1925	62.8			62.8			3,730
1926	74.0			74.0			4,528
1927	83.5			83.5			5,264
1928	92.0			92.0			5,970
1929				64.0			3,138
1930	35.9			35.9			3,034
1931				35.2			679
1932				34.6			690
1933	10.1			33.9			738
1934	14.4			14.4			1,202
1935	23.1			23.1			1,544
1936	24.8			24.8	2,800	32,900	2,059
1937	27.1			27.1			3,277
1938	22.3			22.3			2,513
1939	49.8			49.8			3,057
1940	52.5			52.5			3,436
1941	97.1			97.1			4,404
1942	139			139			6,990
1943	215			215			9,177
1944	394			394			15,575
1945	127			127			2,825
1946	150			150			4,539
1947	93			93			5,346
1948	135			135			5,445
1949	221			221			6,267
1950	347			347			18,027
1951	444			444			25,214

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Year	Production	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1952	505			505	2,380	14,600	25,517
1953	821			821	1,870	11,400	57,780
1954	1,140			1,140	2,200	13,300	93,225
1955				1,245	2,130	13,000	85,975
1956				1,350	2,130	12,800	104,690
1957				1,455	1,720	9,940	110,570
1958				1,560	1,610	9,100	87,796
1959				1,665	1,610	8,990	62,435
1960		927		1,770	1,630	8,960	87,077
1961		487		1,875	1,480	8,040	57,221
1962		557		1,980	1,190	6,400	47,273
1963		408		2,085	1,170	6,220	49,520
1964		490		2,190	1,170	6,160	63,979
1965		204		2,295	992	5,110	68,455
1966		177		2,400	1,060	5,330	3,448
1967		474		2,505	970	4,730	7,586
1968		218		2,610	992	4,660	63,703
1969		117		2,715	1,010	4,491	67,980
1970		57.2		2,820	1,150	4,828	73,091
1971		118	590	2,860	1,120	4,509	73,357
1972		27.2	581	2,980	1,160	4,521	19,685
1973		118	835	3,490	1,220	4,475	79,260
1974		63.5	907	4,130	1,740	5,752	113,300
1975		81.60	816	2,620	1,720	5,211	122,420
1976		9.07	1450	2,540	1,830	5,241	75,014
1977		9.07	1630	3,720	1,940	5,219	74,301
1978		9.07	1810	3,080	2,110	5,272	81,934
1979		45.4	2180	2,900	2,260	5,076	75,950
1980		81.6	2270	2,720	2,660	5,263	92,813
1981		136.0	2360	2,900	3,110	5,574	90,178
1982		27.2	2090	1,810	3,110	5,252	83,648
1983		31.8	2360	2,000	3,260	5,335	93,736
1984		81.6	2630	2,900	3,400	5,337	107,610
1985		370	2300	2,300	3,310	5,017	122,380
1986		610	1800	2,400	3,310	4,922	132,320
1987		820	1800	2,400	3,420	4,906	138,850
1988		1000	2300	2,700	3,590	4,948	153,750
1989		630	2600	2,700	3,810	5,011	173,370
1990		790	2600	2,700	4,030	5,027	162,590
1991		590	2400	2,600	4,210	5,038	148,710
1992		770	2100	2,300	4,320	5,019	156,180
1993		810	1700	2,300	4,210	4,751	127,410
1994		851	1700	2,500	4,410	4,850	127,970
1995		1140	1900	2,600	4,340	4,642	177,430
1996		884	2200	2,700	4,340	4,510	213,650
1997		975	1880	2,800	4,480	4,550	212,680
1998		2590	1340	2,800	4,480	4,480	178,330
1999		2,690	1,330	2,800	4,470	4,361	187,820
2000		2,640	1,310	2,800	4,470	4,233	189,300

Lithium Worksheet Notes

Data Sources
The sources of data for the lithium worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB) and its predecessor, Mineral Resources of the United States (MR); Mineral Commodity Summaries (MCS) and its predecessor, Commodity Data Summaries (CDS); and U.S. Bureau of Mines Circular 8053 (Schreck, 1961). The years of publication and corresponding years of data coverage are listed in the References section below. Blank cells in the worksheet indicate that data were either not available or were withheld to avoid disclosing proprietary information.

Production
Production data for lithium refers to lithium contained in material produced or shipped from mines and brine operations in the United States. Production data for the years 1940–54 include both gross tons of lithium minerals and compound production and Li_2O content of these products. Li_2O contains 46.46% lithium; this information was used to determine lithium content for those years. Because production data for the years 1940–54 included dilithium sodium phosphate, the average lithium content of domestic production varied from 2.50% to 5.20% for the period. Most lithium ores average about 2.00% and, and dilithium sodium phosphate contains about 10.5% lithium.

Prior to 1940, the quantities of different lithium-bearing materials were not specified so that assumptions were made to estimate lithium content. Dilithium sodium phosphate was produced during the years 1938–78, so adjustments were made for the years 1938 and 1939. Lithium content was estimated as 2.50% for 1939 and 2.00% for 1938. Production data from 1900 through 1954 were taken from U.S. Bureau of Mines Information Circular 8053 (Schreck, 1961). For the years 1929, 1931, 1932 and 1955–2000 production data were withheld to avoid disclosure of individual company confidential data.

Imports
Import data for the years 1960-70 are from the MCS, while import data for the years 1971–2000 are from the Salient Statistics table in the MYB. All import data are in contained lithium. Most imports for the years 1960–88 were mineral concentrates used in ceramics and glass not used to produce lithium compounds. In addition, during this period, the compounds reported as imports varied from year to year. Often the designations were nonspecific, such as compounds, salts, and/or organic salts making the reported lithium contents questionable. When the U.S. Census Bureau (USCB) began using Harmonized Codes in 1989, lithium carbonate and lithium hydroxide imports were specified. Unfortunately, other categories of lithium compounds were combined in nonspecific categories. Since 1989, imports of lithium ores and ore concentrates have not been reported by USCB, although the United States remains a major importer of these materials. Lithium metal imports became unavailable also. For these reasons, a large percentage of lithium imports is unreported. Import data are not available for the years 1900–59.

Exports
All export data are in contained lithium. For the years 1971–81, USCB reported exports of lithium hydroxide only. Data for other compounds was estimated with reported imports by other countries of U.S. lithium compounds. However, the lithium hydroxide data were significantly lower than the reported lithium hydroxide imports of the other countries listed. For the years 1982–88, USCB reported exports of lithium carbonate, lithium hydroxide, and other lithium compounds. Data are from the Salient Statistics table in the MYB. Export data are not available for the years 1900–70.

Apparent Consumption
Consumption data are in contained lithium. Production data were used to estimate consumption from 1900–54, since import and export data were not available. Apparent consumption data for the years 1929, 1931, and 1932 were interpolated since data for these years were not available. From 1955-70, consumption was interpolated. Consumption data for the years 1971–2000 were taken from the Salient Statistics table in the MYB where the data are reported as estimated consumption.

Unit Value ($/t)
Unit value is the value of 1 metric ton (t) of lithium apparent consumption. The price series for lithium carbonate was used to estimate unit value for lithium. Lithium carbonate is a good estimator of unit value due to the large quantity and importance of this compound compared to other lithium compounds.

Unit Value (98$/t)
The Consumer Price Index conversion factor, with 1998 as the base year, is used to adjust unit value in current U.S. dollars to the unit value in constant 1998 U.S. dollars.

World Production
World production data are in gross tons of lithium minerals and brine. Since 1967, lithium production was reported as ore and ore concentrates from mines and lithium carbonate from brine deposits. World production data for the years 1966–67 do not include data from Rhodesia (Zimbabwe) and some other African countries. Zimbabwe was by far the largest producer at the time. After 1954, world production does not include U.S. production. Data were not available for the years 1900–24.

References

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